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## PATENT ABSTRACTS OF JAPAN

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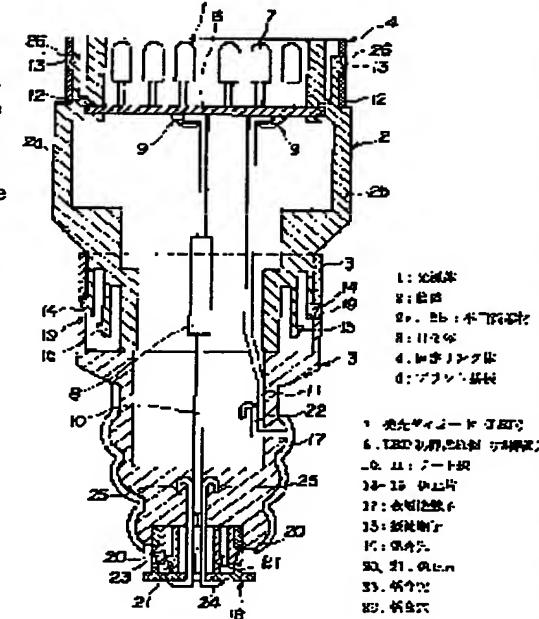
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## (54) LED ASSEMBLY LAMP

## (57)Abstract:

**PROBLEM TO BE SOLVED:** To provide an LED assembly lamp which, while being able to respond easily to various models and forms such as display lamps and the like, can change luminescence color of the light emitting diodes quickly.

**SOLUTION:** It has a light source body 1, in which the light emitting diodes 7 are mounted on a printed circuit board 4, a case 2 which can hold this light source body 1, and a cap body 3 and a fixing ring body 4 prepared in this case 2 so as to be possible to be attached or detached. It is made so that after removing the cap body 3 and the fixing ring body 4 from the case 2 and by exchanging the light source body 17 by canceling the state that the light source body 1 is held by the case 2, the cap body 3 and the fixing ring body 4 may be equipped again by holding the light source body 1 with the case 2. Thereby, the light source body 1 and the cap body 3 can be exchanged easily.



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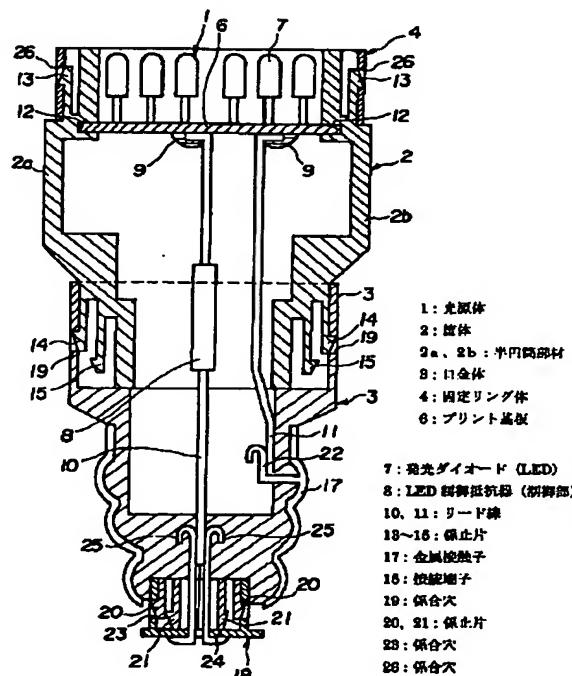
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(54) 【発明の名称】組み立て式LEDランプ

(57) 【要約】

【課題】 表示灯等の種々の型式や形状に容易に対応できるとともに、発光ダイオードの発光色を迅速に変換できる組み立て式LEDランプの提供。

【解決手段】 発光ダイオード7をプリント基板4に実装した光源体1と、この光源体1を保持可能な筐体2と、この筐体2に着脱可能に設けられる口金体3および固定リング体4とを備えている。これにより、筐体2から口金体3と固定リング体4を取り外し、筐体2で光源体1を保持する状態を解除して光源体17を交換した後、再び光源体1を筐体2で保持して口金体3と固定リング体4を装着するようになっているので、光源体1や口金体3を容易に交換できる。



## 【特許請求の範囲】

【請求項1】プリント基板上に実装される複数個のレンズ型発光ダイオードと、これらの発光ダイオードを制御する制御部と、前記プリント基板に接続され、前記発光ダイオードに電源を供給する一対のリード線とを含む光源体を備えた組み立て式LEDランプにおいて、円筒状に形成され、前記光源体を保持可能な筐体と、この筐体の一端側に着脱可能に設けられ、前記リード線に接続される口金体と、前記筐体の他端側に着脱可能に設けられる固定リング体とを有することを特徴とする組み立て式LEDランプ。

【請求項2】前記筐体を、左右対称に形成される一対の半円筒部材から構成したことを特徴とする請求項1記載の組み立て式LEDランプ。

【請求項3】前記筐体の一端側に、円周上にそれぞれ配置され、前記口金体に係止可能な1組の係止片を設けたことを特徴とする請求項1記載の組み立て式LEDランプ。

【請求項4】前記筐体の一端側に、異なる円周上に配置され、複数種の口金体にそれぞれ係止可能な複数組の係止片を設けたことを特徴とする請求項1記載の組み立て式LEDランプ。

【請求項5】前記口金体の先端に、前記リード線の一方に接続される接続端子を着脱可能に設けたことを特徴とする請求項1記載の組み立て式LEDランプ。

## 【発明の詳細な説明】

## 【0001】

【発明の属する技術分野】本発明は、複数個のレンズ型発光ダイオード（いわゆるLED）を備えた組み立て式LEDランプに係り、特に、各種の表示灯や案内灯等として用いるのに好適な組み立て式LEDランプに関する。

## 【0002】

【従来の技術】従来、各種の表示灯や案内灯は、表示面等を点灯する白熱球を備えていたが、この従来の表示灯や案内灯では電力消費が多いとともに、球切れの恐れがありメンテナンス費用も高価であるため、例えば、実用新案公報平4-763号公報に記載されているように、省エネルギー化や球切れがないメンテナンスフリーを目的として、複数の直進性レンズ型発光ダイオードを円筒状の台座に装着し、この台座に白熱球用と同様の口金体を取り付けた消火栓用LEDランプが提案されている。なお、一般に各種の表示灯や案内灯では、電球部の口金体の形状がねじ込み式とバイオネット式に分かれていることや、JIS規格で定められている種々の型式「E10」や「E12」などが使用されている。

## 【0003】

【発明が解決しようとする課題】ところで、前述した従来技術にあっては、各種の表示灯や案内灯で使用する場合に、口金体の形状やJIS規格で定められる種々の型

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式に対応するため、表示する部分の大小によりランプ径、長さなど形状がさまざまに異なるものが数多く必要である。

【0004】また近年、発光ダイオードの発光色として従来の赤色、緑色に加えて青色、橙色および白色が発光できるものが商品化されており、これに伴い、各種の表示灯や案内灯などの発光色をそれぞれ目的に見合うものに変換するニーズが増えている。

【0005】本発明は、このような従来技術における実情に鑑みてなされたもので、その目的は、表示灯や案内灯等で用いられる種々の型式や形状に容易に対応できるとともに、発光ダイオードの発光色を変換する作業を迅速に行なうことのできる組み立て式LEDランプを提供することにある。

## 【0006】

【課題を解決するための手段】上記目的を達成するため、本発明の請求項1に係る発明は、プリント基板上に実装される複数個のレンズ型発光ダイオードと、これらの発光ダイオードを制御する制御部と、前記プリント基板に接続され、前記発光ダイオードに電源を供給する一対のリード線とを含む光源体を備えた組み立て式LEDランプにおいて、円筒状に形成され、前記光源体を保持可能な筐体と、この筐体の一端側に着脱可能に設けられ、前記リード線に接続される口金体と、前記筐体の他端側に着脱可能に設けられる固定リング体とを有する構成にしてある。

【0007】このように構成した本発明の請求項1に係る発明では、光源体を保持する筐体から口金体および固定リング体を取り外し、筐体で光源体を保持する状態を解除して光源体を交換した後、この交換した光源体を筐体で再び保持して口金体および固定リング体を装着する。これにより、発光ダイオードの発光色を変換する作業を迅速に行なえる。また、筐体から取り外した口金体を他の種類のものと交換することによって、表示灯や案内灯等で用いられる種々の型式や形状に容易に対応することができる。

【0008】また、本発明の請求項2に係る発明は、請求項1に係る発明において、前記筐体を、左右対称に形成される一対の半円筒部材から構成してある。

【0009】このように構成した本発明の請求項2に係る発明では、筐体で保持される光源体を交換する際、筐体から口金体および固定リング体を取り外して筐体を一対の半円筒部材に分割した状態で、これらの半円筒部材から光源体を取り出すことができるので、この光源体の交換作業を円滑に行なえる。

【0010】また、本発明の請求項3に係る発明は、請求項1に係る発明において、前記筐体の一端側に、円周上に配置され、前記口金体に係止可能な1組の係止片を設けた構成にしてある。

【0011】このように構成した本発明の請求項3に係

る発明では、筐体に対して口金体を装着することにより、筐体の一端側に設けられる係止片で口金体を係止でき、また、上記の係止片を操作して口金体との係合状態を解除することにより、筐体から口金体を取り外せるので、筐体に対して口金体を着脱する作業を円滑に行なえる。

【0012】また、本発明の請求項4に係る発明は、請求項1に係る発明において、前記筐体の一端側に、異なる円周上に配置され、複数種の口金体にそれぞれ係止可能な複数組の係止片を設けた構成にしてある。

【0013】このように構成した本発明の請求項4に係る発明では、筐体の一端側に設けられる複数組の係止片の操作により、筐体に対して複数種の口金体を容易に着脱できるので、口金体を交換する作業を円滑に行なえる。

【0014】また、本発明の請求項5に係る発明は、請求項1に係る発明において、前記口金体の先端に、前記リード線の一方に接続される接続端子を着脱可能に設けた構成にしてある。

【0015】このように構成した本発明の請求項5に係る発明では、口金体の先端から接続端子を取り外した後、他の種類の接続端子を口金体の先端に装着し、このように口金体の接続端子を他の種類のものと交換することにより、表示灯や案内灯等で用いられる一層多くの型式や形状のものに対応できる。

#### 【0016】

【発明の実施の形態】以下、本発明の組み立て式LEDランプの実施の形態を図面に基づいて説明する。

【0017】図1は本発明の一実施形態に係る組み立て式LEDランプの断面図、図2は本実施形態に設けられる光源体の説明図、図3は本実施形態に設けられる固定リング体の断面図、図4は本実施形態に設けられる筐体の断面図、図5は本実施形態に設けられる口金体の断面図、図6は本実施形態に設けられる接続端子の断面図である。

【0018】本実施形態の組み立て式LEDランプは、図1に示すように、光源体1と、この光源体1を保持する円筒状の筐体2と、この筐体2の一端(図1の下端)側に着脱可能に設けられる例えば「E12」サイズの口金体3と、筐体2の他端(図1の上端)側に着脱可能に設けられる円筒状の固定リング体4とから構成されている。

【0019】光源体1は、図2に示すように、円盤状のプリント基板6と、このプリント基板6上に実装される複数個のレンズ型発光ダイオード(いわゆるLED)7と、これらの発光ダイオード7のそれぞれに流れる電流を制御する制御部、例えばLED制御抵抗器8と、プリント基板6の裏面にはんだ9を介して接続され、発光ダイオード7に電源を供給する一対のリード線10、11とからなっている。プリント基板6には、あらかじめ個

々の発光ダイオード7が直列に配線されるように図示しないパターン配線が施されており、このパターン配線に一对のリード線10、11の端部がはんだ9を介してそれぞれ接続され、一方のリード線10の途中にLED制限抵抗器8が介設されている。

【0020】筐体2は、図4に示すように、プリント基板6の外周が係合する係合溝12を内周側に有する一对の半円筒部材2a、2bからなり、これらの半円筒部材2a、2bは左右対称に分かれるように樹脂成型されたものである。半円筒部材2a、2bの上部に、円周上に配置され固定リング体4に係止可能な細長板状の係止片13が複数設けられるとともに、半円筒部材2a、2bの下部に、異なる円周上にそれぞれ配置される2組の係止片14、15が設けられている。これらの係止片14、15は、互いに重なり合わぬように間隔をあけて高さをずらした位置に配置されており、外側の円周上に配置される1組の係止片14が図1に示すように「E12」サイズの口金体3に係止可能であり、同様に、内側の円周上に配置される他の1組の係止片15が図示を省略した他の種類、例えば「E10」サイズの口金体に係止可能である。

【0021】口金体3は、図5に示すように、左右対称に分割可能に成形される樹脂成型部16と、この樹脂成型部16の下側の外周面を覆う金属接触子17と、樹脂成型部16の下端に着脱可能に設けられる接続端子18とからなっている。樹脂成型部16の上部は、段付き円筒状に形成され、筐体2の係止片14が係合可能な複数の係合穴19を有するとともに、樹脂成型部16の下部に、異なる円周上にそれぞれ配置される2組の係止片20、21が設けられている。これらの係止片20、21は、互いに重なり合わぬように間隔をあけて高さをずらした位置に配置されており、外側の円周上に配置される1組の係止片20が図1に示すように接続端子18に係止可能であり、同様に、内側の円周上に配置される他の1組の係止片21が図示を省略した他の種類の接続端子に係止可能である。金属接触子17は、リード線11の先端に接続される接続片22を有している。接続端子18は、樹脂成型部16の係合片20が係合可能な複数の係合穴23を有する樹脂成型部24と、リード線10の先端に接続される金属端子25とからなっている。

【0022】固定リング体4は、図3に示すように、筐体2の係止片13がそれぞれ係合可能な係合穴26を有している。

【0023】この実施形態の組み立て式LEDランプにあっては、例えば「E12」サイズの口金体3から「E10」サイズの図示しない口金体に交換する場合、筐体2の係止片14を先の細いペンなどで押圧して口金体3との係合状態を解除した後、この口金体3を筐体2から取り外すとともに、口金体3の係合片20を先の細いペンなどで押圧して接続端子18との係合状態を解除した

後、この接続端子18を樹脂成形部16から取り外すことにより、口金体3を分解する。

【0024】次いで「E10」サイズの図示しない口金体を組み立てて、この口金体の下部に接続端子18を装着し、この接続端子18の係合穴23に口金体の係止片を嵌め込んだ後、この「E10」サイズの口金体を筐体2の下部に装着し、筐体2の係止片15を「E10」サイズの口金体の係合穴に嵌め込むまで挿入し続ける。次いで、筐体2の係止片15の嵌め込みが完了したことを確認して口金体3から異なる口金体への変更作業を完了する。

【0025】また、発光ダイオード7の発光色を変換するため光源体1を変更する場合、まず筐体2の係止片14を先の細いペンなどで押圧して口金体3との係合状態を解除し、この口金体3から筐体2を取り外すとともに、筐体2の係止片13を先の細いペンなどで押圧して固定リング体4との係合状態を解除し、この固定リング体4を筐体2から取り外した後、筐体2を半円筒部材2a、2bに分解して光源体1を取り外し、発光色の異なる光源体1と交換する。

【0026】このようにして交換した光源体1を半円筒部材2a、2bに装着する際、リード線10を接続端子18の金属端子25に接続し、他のリード線11を口金体3の接続片22に接続するとともに、半円筒部材2a、2bの係合溝12にプリント基板6を嵌め込んだ後、半円筒部材2a、2bを筐体2に一体化して係止片14を口金体3の係合穴19に嵌め込むまで挿入する。最後に、筐体2の上部に固定リング体4を装着して挿入穴26に筐体2の係合片13が嵌め込むまで挿入するようになっている。

【0027】また、口金体3の接続端子18を他の接続端子に交換する場合、樹脂成形部16の係止片20を押圧して接続端子18との係合状態を解除し、この接続端子18を樹脂成形部16より取り外した後、他の種類の図示しない接続端子を樹脂成形部16に装着し、この装着した接続端子を樹脂成形部16の他の係止片21で係止する。

【0028】このように構成した本実施形態では、筐体2から口金体3および固定リング体4を取り外し、筐体2を分解した状態で光源体1を交換した後、この交換した光源体1を筐体2で再び保持して口金体3および固定リング体4を装着することにより、発光ダイオード7の発光色を変換する作業を迅速に行なえる。

【0029】また、本実施形態では、筐体2から取り外した口金体3を他のものと交換することにより、表示灯や案内灯等で用いられる種々の型式や形状に容易に対応することができる。さらに、口金体3の樹脂成形部16から接続端子18を取り外して他の種類の図示しない接続端子と交換することにより、一層多くの型式や形状のものに対応できる。

【0030】また、本実施形態では、光源体1を交換する際、筐体2を半円筒部材2a、2bに分割した状態で光源体1を交換できるので、この光源体1の交換作業を円滑に行なえる。

【0031】また、本実施形態では、筐体2に対して口金体3を装着して押し込むことにより、筐体2の係止片14で口金体3に係止できるとともに、上記の係止片14を操作し口金体3との係合状態を解除することにより、筐体2から口金体3を取り外せるので、筐体2に対して口金体3を着脱する作業を円滑に行なえる。

【0032】また、本実施形態では、筐体2の一端側に口金体3や他の口金体にそれぞれ係止可能な2組の係止片20、21を設けたので、これらの係止片20、21の操作により口金体3を他の口金体と交換する作業も円滑に行なえる。

【0033】

【発明の効果】以上、説明したように、本発明の請求項1に係る発明では、各種の表示灯や案内灯などの目的に応じて、発光ダイオードの発光色を迅速に変換することができるとともに、筐体に装着される口金体を交換することにより、表示灯や案内灯等で用いられる種々の型式や形状に容易に対応することができる。

【0034】また、本発明の請求項2に係る発明では、光源体を交換する際、筐体から口金体および固定リング体を取り外し、筐体を半円筒部材に分割した状態で光源体を取り出すことができるので、この光源体の交換作業を円滑に行なえる。

【0035】また、本発明の請求項3に係る発明では、筐体に対して口金体を装着して押し込むことにより、筐体の一端側に設けられる1組の係止片で口金体を係止できるとともに、上記の係止片を操作し口金体との係合状態を解除することにより、筐体から口金体を取り外せるので、筐体に対して口金体を着脱する作業を円滑に行なえる。

【0036】また、本発明の請求項4に係る発明では、筐体の一端側に複数種の口金体に係止可能な多数組の係止片を設けたので、これらの係止片の操作により口金体を他の種類のものと交換する作業を円滑に行なえる。

【0037】また、本発明の請求項5に係る発明では、口金体の先端から接続端子を取り外して他の種類の接続端子を口金体の先端に装着することにより、口金体の接続端子を交換できるので、表示灯や案内灯等で用いられる一層多くの型式や形状のものに対応できる。

【図面の簡単な説明】

【図1】本発明の一実施形態に係る組み立て式LEDランプの断面図である。

【図2】本実施形態に設けられる光源体の説明図である。

【図3】本実施形態に設けられる固定リング体の断面図である。

【図4】本実施形態に設けられる筐体の断面図である。

【図5】本実施形態に設けられる口金体の断面図である。

【図6】本実施形態に設けられる接続端子の断面図である。

【符号の説明】

- 1 光源体
- 2 筐体
- 2a、2b 半円筒部材
- 3 口金体
- 4 固定リング体

6 プリント基板

7 発光ダイオード (LED)

8 LED制御抵抗器 (制御部)

10、11 リード線

13~15 係止片

17 金属接触子

18 接続端子

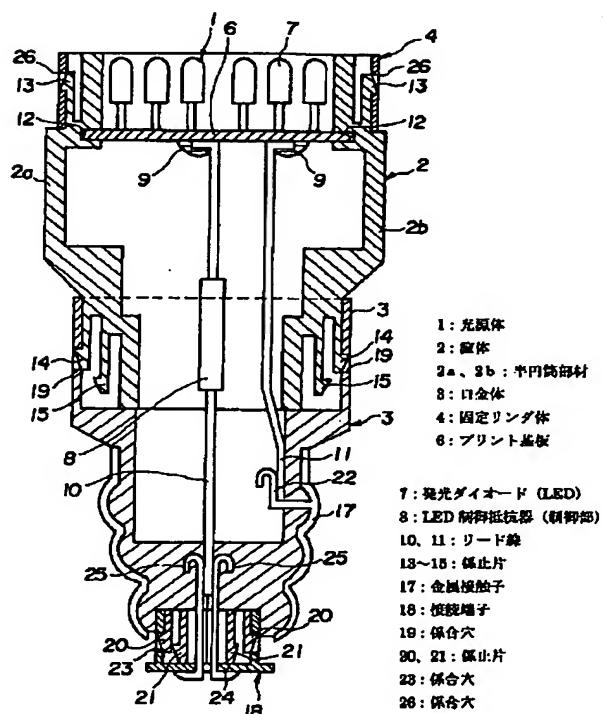
19 係合穴

20、21 係止片

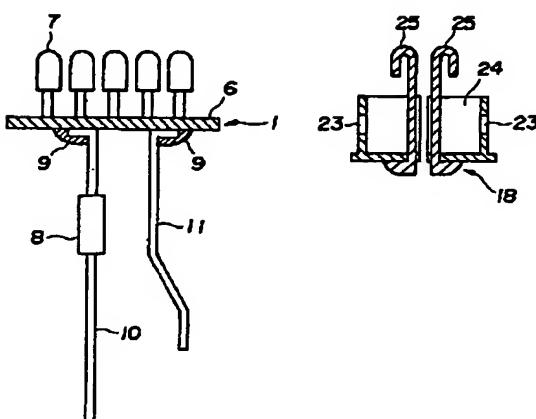
10 23 係合穴

26 係合穴

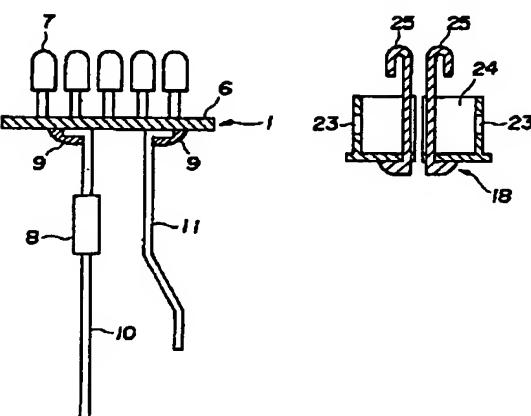
【図1】



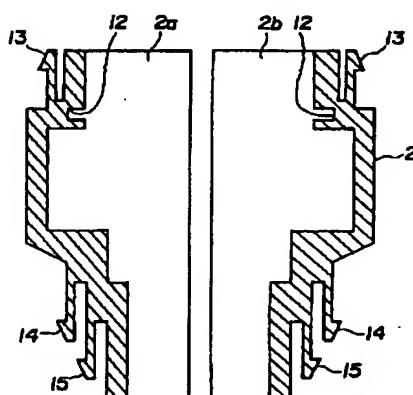
【図2】



【図6】



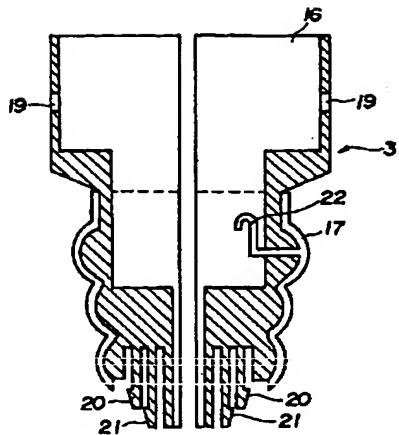
【図4】



【図3】



【図 5】



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フロントページの続き

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// F 21 Y 101:02

識別記号

F I  
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F ターム(参考) 3K013 AA03 BA01 CA05 CA16 DA09  
5F041 DB01 DC07 DC23 DC77 DC84  
FF11

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**CLAIMS**

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**[Claim(s)]**

[Claim 1] Two or more lens mold light emitting diodes mounted on a printed circuit board, and the control section which controls such light emitting diodes, In the sectional LED lamp equipped with the light source object containing the lead wire of the pair which is connected to said printed circuit board and supplies a power source to said light emitting diode the mouthpiece which is formed in the shape of a cylinder, is prepared in the end side of the case which can hold said light source object, and this case removable, and is connected to said lead wire -- the sectional LED lamp characterized by having the body and the stop ring object prepared in the other end side of said case removable.

[Claim 2] The sectional LED lamp according to claim 1 characterized by constituting said case from semicircle cylinder part material of the pair formed in bilateral symmetry.

[Claim 3] to the end side of said case, it arranges on a periphery, respectively -- having -- said mouthpiece -- the sectional LED lamp according to claim 1 characterized by preparing 1 set of pieces of a stop which can be stopped on the body.

[Claim 4] it arranges on a periphery which is different in the end side of said case -- having -- two or more sorts of mouthpieces -- the sectional LED lamp according to claim 1 characterized by preparing two or more sets of pieces of a stop which can be stopped on the body, respectively.

[Claim 5] said mouthpiece -- the sectional LED lamp according to claim 1 characterized by preparing the connection terminal connected to one side of said lead wire at a bodily tip removable.

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## DETAILED DESCRIPTION

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### [Detailed Description of the Invention]

#### [0001]

[Field of the Invention] This invention relates to the sectional LED lamp equipped with two or more lens mold light emitting diodes (the so-called LED), and relates to a suitable sectional LED lamp to use as various kinds of annunciations, guidance LGTs, etc. especially.

#### [0002]

[Description of the Prior Art] Although various kinds of annunciations and guidance LGTs were conventionally equipped with the incandescence ball which turns on the screen etc. With this conventional annunciation and conventional guidance LGT, while there is much power consumption, there is fear of a ball piece. Since maintenance costs are also expensive, For example, as indicated by the utility model official report Taira No. 763 [ four to ] official report a purpose [ maintenance free / without energy saving or a ball piece ] -- carrying out -- two or more rectilinear-propagation nature lens mold light emitting diodes -- a cylinder-like plinth -- equipping -- the mouthpiece same to this plinth as the object for incandescence balls -- the LED lamp for hydrants furnished with the body is proposed. in addition -- general -- various kinds of indicating lamps and guidance LGTs -- the mouthpiece of the electric bulb section -- that the bodily configuration is divided into the screwed type and the bayonet type, the form "E10" of the versatility defined by JIS, "E12", etc. are used.

#### [0003]

[Problem(s) to be Solved by the Invention] by the way, the case where it is used with various kinds of annunciations and guidance LGTs if it is in the conventional technique mentioned above -- a mouthpiece -- since it corresponds to the various form defined by a bodily configuration and JIS, many things from which configurations, such as a diameter of a lamp and die length, differ variously by the size of the part to display are required.

[0004] Moreover, the conventional red and the thing to which blue, orange, and white can emit light in addition green are commercialized as the luminescent color of light emitting diode, and the needs which change the luminescent color of various kinds of annunciations, a guidance LGT, etc. into what balances the purpose, respectively are increasing in connection with this in recent years.

[0005] This invention was made in view of the actual condition in such a conventional technique, and the purpose is to offer the sectional LED lamp which can do quickly the activity which changes the luminescent color of light emitting diode while being able to respond to various form and configurations where it is used with an annunciation, a guidance LGT, etc., easily.

#### [0006]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, invention concerning claim 1 of this invention Two or more lens mold light emitting diodes mounted on a printed circuit board, and the control section which controls such light emitting diodes, In the sectional LED lamp equipped with the light source object containing the lead wire of the pair which is connected to said printed circuit board and supplies a power source to said light emitting diode the mouthpiece which is formed in the shape of a cylinder, is prepared in the end side of the case which can hold said light source object, and this case removable, and is connected to said lead wire -- it is made the configuration which has the body and the stop ring object prepared in the other end side of said case removable.

[0007] thus, the mouthpiece from the case which holds a light source object in invention concerning

claim 1 of constituted this invention -- this exchanged light source object after removing the body and a stop ring object, canceling the condition of holding a light source object with a case and exchanging a light source object -- a case -- again -- holding -- a mouthpiece -- it equips with the body and a stop ring object. Thereby, the activity which changes the luminescent color of light emitting diode can be done quickly. moreover, the mouthpiece removed from a case -- it can respond to various form and configurations where it is used with an annunciator, a guidance LGT, etc., easily by exchanging the body for the thing of other classes.

[0008] Moreover, invention concerning claim 2 of this invention consists of semicircle cylinder part material of the pair formed in bilateral symmetry in said case in invention concerning claim 1.

[0009] thus, the time of exchanging the light source object held with a case in invention concerning claim 2 of constituted this invention -- the mouthpiece from a case -- where it removed the body and a stop ring object and a case is divided into the semicircle cylinder part material of a pair, since a light source object can be taken out from these semicircle cylinder part material, exchange of this light source object can be performed smoothly.

[0010] moreover, invention concerning claim 3 of this invention is arranged on a periphery to the end side of said case in invention concerning claim 1 -- having -- said mouthpiece -- it is made the configuration which prepared 1 set of pieces of a stop which can be stopped on the body.

[0011] thus -- invention concerning claim 3 of constituted this invention -- a case -- receiving -- a mouthpiece -- the piece of a stop prepared in the end side of a case by equipping with the body -- a mouthpiece -- the body -- it can stop -- moreover, the above-mentioned piece of a stop -- operating it -- a mouthpiece -- canceling an engagement condition with the body -- the mouthpiece from a case -- since the body can be removed -- a case -- receiving -- a mouthpiece -- the activity which detaches and attaches the body can be done smoothly.

[0012] moreover, invention concerning claim 4 of this invention is arranged in invention concerning claim 1 on a periphery which is different in the end side of said case -- having -- two or more sorts of mouthpieces -- it is made the configuration which prepared two or more sets of pieces of a stop which can be stopped on the body, respectively.

[0013] thus, actuation of two or more sets of pieces of a stop prepared in the end side of a case in invention concerning claim 4 of constituted this invention -- a case -- receiving -- two or more sorts of mouthpieces -- since the body can be detached and attached easily -- a mouthpiece -- the activity which exchanges the bodies can be done smoothly.

[0014] moreover, invention which invention concerning claim 5 of this invention requires for claim 1 -- setting -- said mouthpiece -- it is made the configuration which prepared the connection terminal connected to one side of said lead wire at the bodily tip removable.

[0015] thus -- invention concerning claim 5 of constituted this invention -- a mouthpiece -- the connection terminal of other classes after removing a connection terminal from a bodily tip -- a mouthpiece -- a bodily tip -- equipping -- such -- a mouthpiece -- it is used with an annunciator, a guidance LGT, etc. by exchanging a bodily connection terminal for the thing of other classes -- one layer can respond to much form or the thing of a configuration.

[0016]

[Embodiment of the Invention] Hereafter, the gestalt of operation of the sectional LED lamp of this invention is explained based on a drawing.

[0017] the mouthpiece with which the sectional view of the sectional LED lamp which drawing 1 requires for 1 operation gestalt of this invention, the explanatory view of the light source object with which drawing 2 is prepared in this operation gestalt, the sectional view of the stop ring object with which drawing 3 is prepared in this operation gestalt, the sectional view of the case with which drawing 4 is prepared in this operation gestalt, and drawing 5 are prepared in this operation gestalt -- a bodily sectional view and drawing 6 are the sectional views of a connection terminal established in this operation gestalt.

[0018] the mouthpiece of for example, "E12" size with which the sectional LED lamp of this operation gestalt is formed in the end (lower limit of drawing 1 ) side of the light source object 1, the case 2 of the shape of a cylinder holding this light source object 1, and this case 2 removable as shown in drawing 1 -- it consists of the body 3 and a stop ring object 4 of the shape of a cylinder prepared in the other end (upper limit of drawing 1 ) side of a case 2 removable.

[0019] It connects with the disc-like printed circuit board 6, two or more lens mold light emitting diodes (the so-called LED) 7 mounted on this printed circuit board 6, and the control section 8 which controls the current which flows to each of such light emitting diodes 7, for example, an LED control resistor, through solder 9 at the rear face of a printed circuit board 6, and the light source object 1 consists of lead wire 10 and 11 of the pair which supplies a power source to light emitting diode 7, as shown in drawing 2. Pattern wiring which is not illustrated so that each light emitting diode 7 may be beforehand wired by the serial is given, the edge of the lead wire 10 and 11 of a pair is connected to this pattern wiring through solder 9, respectively, and the LED limiting resistor 8 is interposed in the printed circuit board 6 in the middle of one lead wire 10.

[0020] A case 2 consists of semicircle cylinder part material 2a of the pair which has the engagement slot 12 where the periphery of a printed circuit board 6 is engaged in an inner circumference side as shown in drawing 4, and 2b, and resin molding of such semicircle cylinder part material 2a and the 2b is carried out so that it may be divided into bilateral symmetry. While being arranged on a periphery and forming two or more pieces 13 of a stop of the shape of an elongated plate which can be stopped on the stop ring object 4 in the upper part of semicircle cylinder part material 2a and 2b, 2 sets of pieces 14 and 15 of a stop arranged, respectively are formed on a periphery which is different in the lower part of semicircle cylinder part material 2a and 2b. These pieces 14 and 15 of a stop are arranged in the location which opened spacing and shifted height so that it might not overlap mutually. 1 set of pieces 14 of a stop arranged on an outside periphery show drawing 1 -- as -- the mouthpiece of "E12" size -- other classes to which it could stop on the body 3 and 1 set of other pieces 15 of a stop arranged on an inside periphery abbreviated illustration similarly, for example, the mouthpiece of "E10" size, -- it can stop on the body.

[0021] a mouthpiece -- the body 3 consists of the resin molding section 16 fabricated by bilateral symmetry possible [ division ] and a connection terminal 18 which can prepare the peripheral face of this resin molding section 16 bottom in the wrap metallic contact child 17 and the lower limit of the resin molding section 16 removable, as shown in drawing 5. While the upper part of the resin molding section 16 is formed in the shape of a cylinder with a stage and having two or more engagement holes 19 where the piece 14 of a stop of a case 2 can be engaged, 2 sets of pieces 20 and 21 of a stop arranged, respectively are formed on a periphery which is different in the lower part of the resin molding section 16. These pieces 20 and 21 of a stop can stop for the connection terminal 18, as 1 set of pieces 20 of a stop which are arranged in the location which opened spacing and shifted height so that it may not overlap mutually, and are arranged on an outside periphery show drawing 1, and 1 set of other pieces 21 of a stop arranged on an inside periphery can stop them similarly for the connection terminal of other classes which omitted illustration. The metallic contact child 17 has the piece 22 of connection connected at the tip of lead wire 11. The connection terminal 18 consists of the resin molding section 24 which has two or more engagement holes 23 where the piece 20 of engagement of the resin molding section 16 can be engaged, and a metal terminal 25 connected at the tip of lead wire 10.

[0022] As shown in drawing 3, as for the stop ring object 4, the piece 13 of a stop of a case 2 has the engagement hole 26 which can be engaged, respectively.

[0023] If it is in the sectional LED lamp of this operation gestalt for example, the mouthpiece of "E12" size -- the mouthpiece which "E10" size does not illustrate from the body 3, when exchanging for the body the piece 14 of a stop of a case 2 -- a previous thin pen etc. -- pressing -- a mouthpiece -- this mouthpiece after canceling an engagement condition with the body 3, while removing the body 3 from a case 2 a mouthpiece -- removing this connection terminal 18 from the resin shaping section 16, after pressing the piece 20 of engagement of the body 3 with a previous thin pen etc. and canceling an engagement condition with the connection terminal 18 -- a mouthpiece -- the body 3 is disassembled.

[0024] subsequently, the mouthpiece which "E10" size does not illustrate -- the body -- assembling -- this mouthpiece -- the bodily lower part -- the connection terminal 18 -- equipping -- the engagement hole 23 of this connection terminal 18 -- a mouthpiece -- the mouthpiece of this "E10" after inserting in bodily piece of stop size -- the body -- the lower part of a case 2 -- equipping -- the piece 15 of a stop of a case 2 -- the mouthpiece of "E10" size -- it continues inserting until it inserts in a bodily engagement hole. subsequently, the thing which insertion of the piece 15 of a stop of a case 2

completed -- checking -- a mouthpiece -- a mouthpiece which is different from the body 3 -- modification to the body is completed.

[0025] moreover, the case where the light source object 1 is changed in order to change the luminescent color of light emitting diode 7 -- first -- the piece 14 of a stop of a case 2 -- a previous thin pen etc. -- pressing -- a mouthpiece -- an engagement condition with the body 3 -- canceling -- this mouthpiece, while removing a case 2 from the body 3 After pressing the piece 13 of a stop of a case 2 with a previous thin pen etc., canceling an engagement condition with the stop ring object 4 and removing this stop ring object 4 from a case 2, a case 2 is disassembled into semicircle cylinder part material 2a and 2b, the light source object 1 is removed, and it exchanges for the light source object 1 with which the luminescent color differs.

[0026] thus, the time of equipping semicircle cylinder part material 2a and 2b with the exchanged light source object 1 -- lead wire 10 -- the metal terminal 25 of the connection terminal 18 -- connecting -- other lead wire 11 -- a mouthpiece, while connecting with the piece 22 of connection of the body 3 semicircle cylinder part material after inserting printed circuit board 6 in semicircle cylinder part material 2a and engagement slot 12 on 2b 2a, and 2b -- a case 2 -- unifying -- the piece 14 of a stop -- a mouthpiece -- it inserts until it inserts in the engagement hole 19 of the body 3. It inserts until it equips the upper part of a case 2 with the stop ring object 4 and the piece 13 of engagement of a case 2 finally inserts in the insertion hole 26.

[0027] When exchanging the connection terminal 18 of the body 3 for other connection terminals, press the piece 20 of a stop of the resin molding section 16, and an engagement condition with the connection terminal 18 is canceled. moreover, a mouthpiece -- After removing this connection terminal 18 from the resin molding section 16, the resin molding section 16 is equipped with the connection terminal which other classes do not illustrate, and this connection terminal with which it equipped is stopped by other pieces 21 of a stop of the resin molding section 16.

[0028] thus -- this constituted operation gestalt -- the mouthpiece from a case 2 -- this exchanged light source object 1 where it removed the body 3 and the stop ring object 4 and a case 2 is disassembled, after exchanging the light source object 1 -- a case 2 -- again -- holding -- a mouthpiece -- the activity which changes the luminescent color of light emitting diode 7 can be quickly done by equipping with the body 3 and the stop ring object 4.

[0029] moreover, the mouthpiece removed from the case 2 with this operation gestalt -- it can respond to various form and configurations where it is used with an annunciator, a guidance LGT, etc., easily by exchanging the body 3 for other things. furthermore, a mouthpiece -- it can respond to much more much form or the thing of a configuration by exchanging for the connection terminal which removes the connection terminal 18 from the resin molding section 16 of the body 3, and other classes do not illustrate.

[0030] Moreover, with this operation gestalt, since the light source object 1 can be exchanged where a case 2 is divided into semicircle cylinder part material 2a and 2b in case the light source object 1 is exchanged, exchange of this light source object 1 can be performed smoothly.

[0031] moreover -- this operation gestalt -- a case 2 -- receiving -- a mouthpiece -- equipping with and pushing in the body 3 -- the piece 14 of a stop of a case 2 -- a mouthpiece -- while being able to stop on the body 3 -- the above-mentioned piece 14 of a stop -- operating it -- a mouthpiece -- canceling an engagement condition with the body 3 -- the mouthpiece from a case 2 -- since the body 3 can be removed -- a case 2 -- receiving -- a mouthpiece -- the activity which detaches and attaches the body 3 can be done smoothly.

[0032] moreover -- this operation gestalt -- the end side of a case 2 -- a mouthpiece -- the body 3 and other mouthpieces -- since 2 sets of pieces 20 and 21 of a stop which can be stopped on the body, respectively were formed -- actuation of these pieces 20 and 21 of a stop -- a mouthpiece -- the body 3 -- other mouthpieces -- the activity exchanged for the body can also be done smoothly.

[0033]

[Effect of the Invention] as mentioned above, the mouthpiece with which a case is equipped while the luminescent color of light emitting diode is quickly convertible in invention concerning claim 1 of this invention according to the purposes, such as various kinds of annunciators and a guidance LGT, as explained -- it can respond to various form and configurations where it is used with an annunciator, a guidance LGT, etc., easily by exchanging the bodies.

[0034] moreover, the time of exchanging a light source object in invention concerning claim 2 of this invention -- the mouthpiece from a case -- the body and a stop ring object are removed, and since a light source object can be taken out where a case is divided into semicircle cylinder part material, exchange of this light source object can be performed smoothly.

[0035] moreover -- invention concerning claim 3 of this invention -- a case -- receiving -- a mouthpiece -- 1 set of pieces of a stop prepared in the end side of a case by equipping with and pushing in the body -- a mouthpiece -- while being able to stop the body -- the above-mentioned piece of a stop -- operating it -- a mouthpiece -- canceling an engagement condition with the body -- the mouthpiece from a case -- since the body can be removed -- a case -- receiving -- a mouthpiece -- the activity which detaches and attaches the body can be done smoothly.

[0036] moreover -- invention concerning claim 4 of this invention -- the end side of a case -- two or more sorts of mouthpieces -- since the piece of a stop of the a large number group which can be stopped on the body was prepared -- actuation of these pieces of a stop -- a mouthpiece -- the activity which exchanges the body for the thing of other classes can be done smoothly.

[0037] moreover -- invention concerning claim 5 of this invention -- a mouthpiece -- a bodily tip to a connection terminal -- removing -- the connection terminal of other classes -- a mouthpiece -- equipping at a bodily tip -- a mouthpiece -- since a bodily connection terminal is exchangeable, it is used with an annunciator, a guidance LGT, etc. -- one layer can respond to much form or the thing of a configuration.

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**DESCRIPTION OF DRAWINGS**

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**[Brief Description of the Drawings]**

[Drawing 1] It is the sectional view of the sectional LED lamp concerning 1 operation gestalt of this invention.

[Drawing 2] It is the explanatory view of the light source object prepared in this operation gestalt.

[Drawing 3] It is the sectional view of the stop ring object prepared in this operation gestalt.

[Drawing 4] It is the sectional view of a case established in this operation gestalt.

[Drawing 5] the mouthpiece prepared in this operation gestalt -- it is a bodily sectional view.

[Drawing 6] It is the sectional view of a connection terminal established in this operation gestalt.

**[Description of Notations]**

1 Light Source Object

2 Case

2a, 2b Semicircle cylinder part material

3 Mouthpiece -- Body

4 Stop Ring Object

6 Printed Circuit Board

7 Light Emitting Diode (LED)

8 LED Control Resistor (Control Section)

10 11 Lead wire

13-15 Piece of a stop

17 Metallic Contact Child

18 Connection Terminal

19 Engagement Hole

20 21 Piece of a stop

23 Engagement Hole

26 Engagement Hole

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[Translation done.]

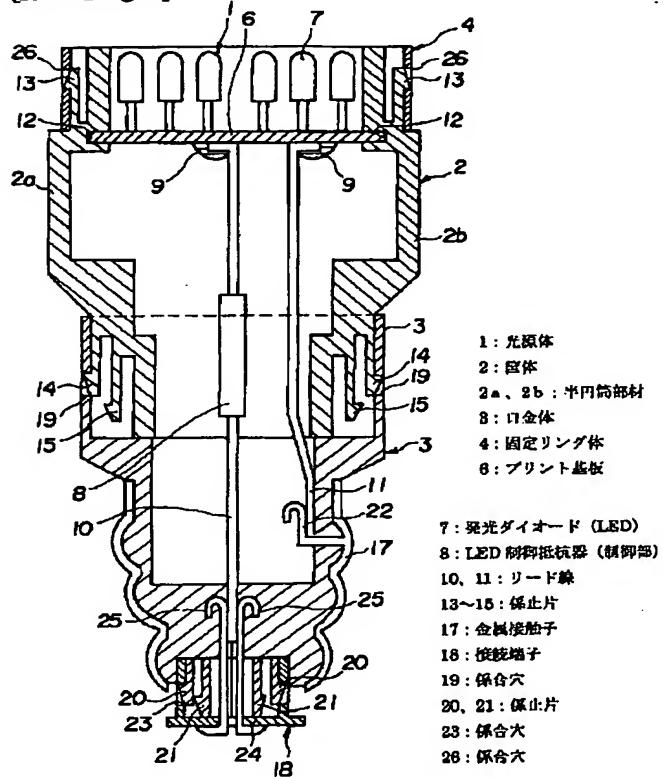
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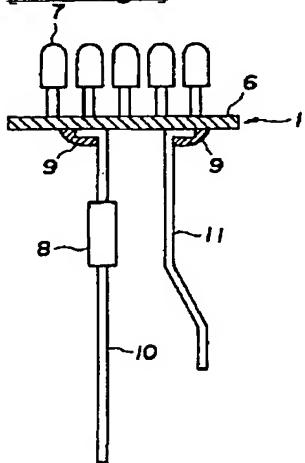
## DRAWINGS

## [Drawing 1]

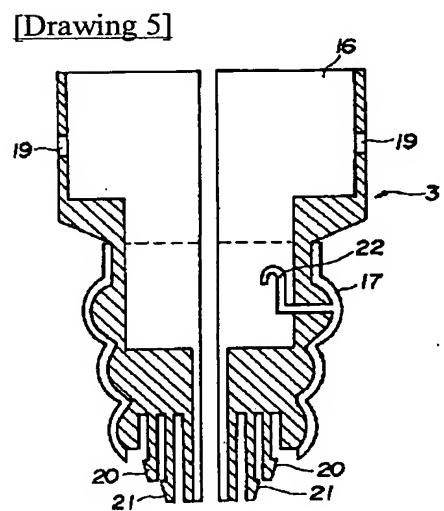
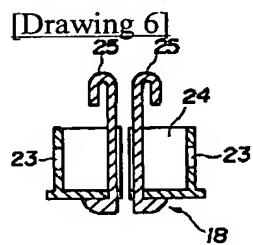
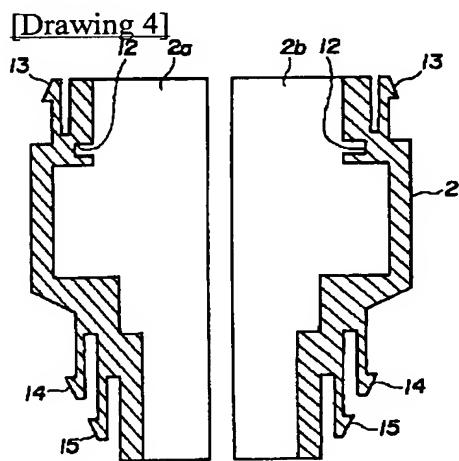
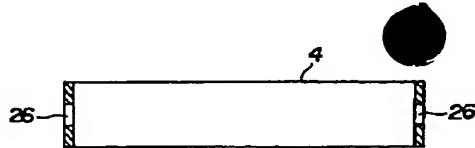


1: 光源体  
2: 壁体  
2a、2b : 半円筒部材  
3: 口金体  
4: 固定リング体  
6: プリント基板  
7: 発光ダイオード (LED)  
8: LED制御抵抗器 (制御部)  
10, 11: リード線  
13~15: 係止片  
17: 金属接触子  
18: 接触端子  
19: 保合穴  
20, 21: 係止片  
23: 係合穴  
24: 係合穴  
26: 係合穴

## [Drawing 2]



## [Drawing 3]



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[Translation done.]